

**Biological Assessment
for
Cook County Land Exchange Environmental Assessment
March 2013**

Executive Summary

The Biological Assessment (BA) documents the potential effects on federally proposed, candidate, threatened or endangered species and designated critical habitat that could result from Alternative 2 of the proposed land exchange project and associated activities as documented in the Cook County Land Exchange EA.

Direct Effects of Alternative 2

- **Determination**

Lynx: No effect

Critical Habitat: No effect

- **Summary of Rationale**

Land exchange will have no direct effects to lynx or critical habitat as it is a legal procedure. *No effect* to lynx or critical habitat is expected from the land exchange alone.

Indirect Effects of Alternative 2

- **Determination**

Lynx: May effect, not likely to adversely effect

Critical Habitat: May effect, not likely to adversely modify critical habitat

- **Summary of Rationale**

Indirect effects of the land exchange would come from activities proposed by the county after the exchange takes place. The amount of habitat change in any analysis area is a small percentage and sufficient habitat is retained to meet Forest Plan objective, standards, and guidelines for protection of lynx and lynx habitat. Activities *may effect, but are not likely to adversely affect* lynx because

- Snowshoe hare habitat would remain above 50 percent in all analysis areas.
- Denning habitat in patches of 5 acres or more would be present on 29 to 50 percent of federal lands in the analyzed areas.
- Lynx may move through the impacted areas but the parcels are generally small and may be avoided.

Changes to critical habitat are within the parameters developed for the Forest Plan to meet lynx habitat needs. Activities *may effect, but are not likely to adversely modify lynx habitat*.

Cumulative Effects of Alternative 2

- **Determination**

Lynx: May affect but are not likely to adversely affect lynx

Critical Habitat: may affect but are not likely to adversely modify the critical habitat

- **Summary of Rationale**

Potential cumulative effects may occur after federal parcels are exchanged.

Alternative 2 of the proposed action of land exchange *may affect but is not likely to adversely affect/modify the lynx/critical habitat* because:

- All alternatives ensure that no more than 6.8% of habitat would be in unsuitable condition for lynx, well below the 30% unsuitable indicator level (G-WL-3).
- Road and trail density would remain the same because no roads or trails are proposed in the land exchange activities.
- Connectivity habitat would be present on 79 to 95 percent of lynx habitat in the analyzed areas and lynx would have plentiful habitat for movement around impacted areas.
- Cumulative change to unsuitable habitat in ten years would remain at or below 13.1 percent on NFS lands.

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1.0 Introduction

The BA tiers to the Programmatic Biological Assessment (USDA Forest Service 2011) for the Forest Plan and provides more specific information on site-specific effects of the project to threatened and endangered species.

This BA was prepared in compliance with the requirements of Forest Service Manual Directives sections 2670.31, 2670.5(3), and 2672.4, the Endangered Species Act of 1973 as amended, and the National Forest Management Act of 1976.

Information provided by the USDI Fish and Wildlife Service (USDI FWS 2013) confirms the species and critical habitat that should be considered for projects conducted on the Superior National Forest:

- Canada lynx (*Lynx canadensis*), threatened
- Canada lynx critical habitat

2.0 Consultation with USDI Fish and Wildlife Service

The Forest Service has initiated consultation with the Fish and Wildlife Service seeking concurrence with the determination of effects in this BA. The MnDOT ARMER BA and BE (USFS 2012) analyzed the effects of the construction of a tower at Pine Mountain (Map F-6), which resulted in a *no effects* determination.

Consultation specific to the Cook County Land Exchange Project is documented in the project file. It includes e-mails, and telephone calls between March 19, 2012 and submission of the BA to the FWS on March 13, 2013, and any subsequent contacts prior to receiving a letter of concurrence from the FWS.

In addition to consultation for Canada lynx requested for this project, programmatic consultation was undertaken for Forest Plan revision. The history of this consultation is documented in the Programmatic Biological Assessment (USDA Forest Service 2011) for the forest plan (USDA Forest Service 2004, pp. 6-7). The relevance of program-level consultation to this project includes those agreements between the Forest Service and the Fish and Wildlife Service reached on defining elements of species' ecology and biology, risk factors and general effects, analysis parameters, monitoring, and management direction in the revised Forest Plan. The BA provides more specific information on how relevant information in the program-level BA is incorporated. Additionally, other factors relevant to this project not discussed in detail in program-level consultation will be discussed in detail in this BA.

3.0 Proposed Action:

The Forest Service proposes to exchange up to 1,581 acres of federally owned land for 1,910 acres of Cook County owned land inside the Boundary Waters Canoe Area Wilderness (BWCAW). See Map 1 in Appendix A for the vicinity map of the lands to be exchanged. The final acres to be exchanged would reflect balanced values.

Table 1 contains the federal lands list in priority order; if all lands are not needed to equal the value of the County lands then federal parcels that were rated a lower priority will be dropped from the exchange. The possibility that all of the federal land will be necessary or that the federal land list will be inadequate is low. The County Board identified priorities for federal exchange lands that would benefit the county; they are gravel supply, septage disposal, communication towers, fire halls, affordable housing, recreation opportunities, cemetery, and economic development sites (Table 1). Maps F-1 through F-11 in Appendix A illustrate the federal lands proposed for exchange.

<i>Table 1. Federal Land List In Priority Order</i>									
Parcel Number	TWP	RNG	SEC	Description	Exchange Acres	Affected Habitat Acres	Map Number	Lynx Analysis Unit*	Purpose
1-PD	63N	1E	33	NWSE	40	5	F-6	SNF40	Tower
2	65N	3W	30	SWSE	40	0	F-8	SNF44	Tower
3	62N	2E	12	NWSW	40	0	F-2	SNF38	Tower
4	61N	4W	34	NWSW	40	0	F-9	SNF32	Tower

Table 1. Federal Land List In Priority Order

Parcel Number	TWP	RNG	SEC	Description	Exchange Acres	Affected Habitat Acres	Map Number	Lynx Analysis Unit*	Purpose
5	64N	1W	10	NWSW	40	0	F-7	SNF44	Tower
6	62N	1E	30	SESE	40	5	F-4	SNF38	Fire hall
7	64N	1W	9	NESE	40	5	F-7	SNF44	Fire hall
8	65N	4W	26	SENW	40	40	F-8	SNF44	Gravel
9	65N	4W	26	NESW	40	40	F-8	SNF44	Gravel
10	65N	4W	26	SWNW	40	40	F-8	SNF44	Gravel
11	59N	4W	29	SWNE	40	5	F-10	CHA2	Fire hall
12	59N	4W	29	NWSE (Part of G.L 2)	27	5	F-10	CHA2	Fire hall
13-PD	62N	1W	15	SWSW	40	40	F-5	SNF39	Gravel
14-PD	62N	1W	15	SESW	40	40	F-5	SNF39	Gravel
15	62N	1W	21	NWSE	40	40	F-5	SNF39	Gravel
16	62N	1W	21	NESE	40	40	F-5	SNF39	Gravel
17	62N	1W	21	SWNE	40	40	F-5	SNF39	Gravel
18**	62N	1W	21	SENE	40	40	F-5	SNF39	Gravel
20**	62N	1E	24	NWSE	40	40	F-4	SNF38	Gravel/septage
21	62N	1E	24	NWSW	40	40	F-4	SNF38	Gravel/septage
22	62N	1E	24	SENW	40	40	F-4	SNF38	Gravel/septage
23-PD	62N	1E	24	NENE	34	34	F-4	SNF38	Gravel/septage
23-PD	62N	1E	24	NENE	4	6	F-4	SNF39	Gravel/septage
24	62N	1E	24	NWNE	40	40	F-4	SNF38	Gravel/septage
25	62N	1E	24	NESW	40	40	F-4	SNF38	Gravel/septage
26	62N	1E	24	NENW	40	40	F-4	SNF38	Gravel/septage
27	62N	1E	24	SWNE	40	40	F-4	SNF38	Gravel/septage
28	62N	2E	24	NWSW	40	5	F-2	CHA2	Fire hall
29-PD	64N	3E	4	G.L. 15	34.89	5	F-1	SNF42	Fire hall
30	61N	2E	9	NENE	40	40	F-3	CHA2	Gravel
31	61N	2E	9	NWNE	40	40	F-3	CHA2	Gravel
32	61N	2E	9	SENE	40	40	F-3	CHA2	Gravel
33	60N	3W	24	SWSW	40	40	F-11	CHA2	Recreation
34	61N	2E	9	SWNE	40	40	F-3	CHA2	Gravel
35	60N	3W	23	SWSE	40	40	F-11	CHA2	Recreation
36	60N	3W	23	SESE	40	40	F-11	CHA2	Recreation
37	62N	1E	31	G.L. 3	38.80	38.8	F-4	SNF38	^Rec/dev
38	62N	1E	31	NENW	40	40	F-4	SNF38	^Rec/dev
39	62N	1E	31	NENE	40	40	F-4	SNF38	^Rec/dev
40	62N	1E	24	NWNW	40	40	F-4	SNF38	Gravel/septage
41	62N	1E	24	SWNW	40	40	F-4	SNF38	Gravel/septage
TOTAL					1580.69 Acres	1193.80 Acres			
*Column contains Lynx Analysis Units (SNF) and Critical Habitat Area (CHA) outside of lynx analysis units.									
**Parcel 19 was removed from the project to create the revised proposed action.									
^Rec/dev indicates recreational and/or developmental use of the parcel.									

Cook County parcels are owned by the State of Minnesota in trust for the local taxing district, but are administered by Cook County, and will hereby be referred to as Cook County lands. All parcels are located in the Boundary Waters Canoe Area Wilderness. The list of parcels is located in Appendix B: Cook County Lands List.

- **Time frame of the action:**

The exchange of land parcels is expected to take place during 2013. Proposed land activities are expected to take place over the next ten years for fire halls, towers, recreation, and development. Gravel removal would take place over the next 100 years as gravel deposits are removed in about 5 acre areas at a time and subsequent reclamation is conducted. Septage spreading is expected to take place for 20 years.

- **Location:** Superior National Forest, Gunflint and Tofte Ranger Districts, Cook County, Minnesota.

Federal Parcels:

The federal parcels are generally 40 acres or a block of adjacent 40 acre parcels. Towers and fire halls generally occupy about 5 acres of any 40-acre parcel to be exchanged for that purpose. The federal lands that Cook County could potentially acquire are scattered throughout Cook County. Maps F-1 through F-11 in Appendix A illustrate the lands proposed for exchange to Cook County.

Cook County Parcels:

The Cook County lands that the FS would acquire are widely scattered, noncontiguous lands distributed throughout the Cook County portion of the BWCAW. Some of these lands are easily accessible by water and portages, other more remote parcels have no water, trail or portage access. There are no structures associated with any of the county lands though some of these lands could be used by the occasional camper. Maps C-1 through C-9 in Appendix A illustrate the county lands proposed for exchange.

General Analysis Area

Areas Excluded from Analysis:

Cook County Parcels: The Cook County parcels are located in the Boundary Waters Canoe Area Wilderness (BWCAW). All Cook County parcels in the BWCAW transferred to federal ownership will be managed according to the Forest Plan and the BWCAW plan with no change from current management as a result of this land exchange. There will be no effects to Canada lynx, and their respective critical habitat components because the alternatives would not differ from the existing condition and habitat would be maintained in Alternative2, therefore no further analysis will be conducted on Cook County's BWCAW parcels.

Areas Analyzed:

Federal Parcels: The federal acreage for which lynx habitat would be removed is listed in Table 2. Parcels outside Lynx Analysis Units are in lynx critical habitat and reside in Critical Habitat Area 2, as defined in the 2011 programmatic biological evaluation (USFS 2011). See Map 1 for the location of the affected LAUs and Critical Habitat Area 2 (CHA2).

Affected habitat acres listed in Tables 1 and 2 are assumed to become unsuitable habitat.

Table 2. Affected Federal Acres by Lynx Analysis Area or Critical Habitat Area.

Lynx Analysis Unit	Affected Acres
CHA2	294
SNF32	0
SNF38	450
SNF39	280
SNF40	5
SNF42	40
SNF44	125
Total	1194
<i>Data Source: WildlifeDataAnalysis.xlsx, Tab LAU_AffectedAcres</i>	

Ecological Setting:

Table 3. Forest Types of All Acres of Federal Parcels

Forest Types	Percent	Acres
Upland hardwoods	6.3%	99.6
Birch-aspen-spruce-fir	71.7%	1135.3
Lowland conifer	4.8%	75.7
Red, white, and jack pine	11.0%	174.5
Lowland hardwoods	1.4%	21.6
Upland and lowland brush and openings	4.8%	75.9
	100%	1582.7
ArcMap used to calculate acres. Slight differences in affected acreages come from using a variety of data analysis programs.		

Table 4. Overview of Species' Affected Environment: Lynx

LAU	General Location	Total Acres	NFS Land Acres	Alternative 2 Acres	% of LAU in Project Area
CHA2	T59N, R4W; T60N, R3W; T62N, R2E; T61N, R2E;	63,247	32,670	294	0.5%
SNF32	T61N, R4W	41,632	38,745	0	0.0%
SNF38	T62N, R1E; T62N, R2E;	38,246	25,496	450	1.2%
SNF39	T62N, R1W	26,542	16,915	280	1.1%
SNF40	T63N, R1E	27,726	23,779	5	0.0%

Table 4. Overview of Species' Affected Environment: Lynx

LAU	General Location	Total Acres	NFS Land Acres	Alternative 2 Acres	% of LAU in Project Area
SNF42	T64N, R3E	28,345	19,991	40	0.1%
SNF44	T65N, R3W; T65N, R4W; T64N, R1W	47,296	34,278	125	0.3%
Total	--	--	--	1194	--

Data source: LAU data from WildlifeDataAnalysis.xlsx, Tab Lynx30% unsuitable. CHA2 data from 2011 Forest Plan BA.

- **Other relevant setting features:** None

- **Project activities analyzed in program-level BA**

Although the Forest Plan BA does not specifically analyze land exchange, Section 4.5.6.1.B (pp. 118-119) provides information on land ownership patterns and Forest Plan direction relevant to land exchange.

4.0 Status of the Canada Lynx

Canada lynx ecology (see section 3.3 of 2011 program-level BA) and population status (see section 3.4 of 2011 program-level BA) above the Forest level are well documented in the program level BA. Below is new population status information for the Superior National Forest and the project area.

Population Status (see section 3.4 of program-level BA)

- **Superior National Forest:** No new information.
- **Minnesota's lynx-hare cycles:** No new information
- **Population Status in Area:**
 - **Project site-specific surveys:** No site-specific surveys were conducted for the Cook County Land Exchange Project Area.
 - **Known occurrences:** Lynx occurrences are assumed in the Cook County Land Exchange Project Area because of evidence from previous analyses. Most of the lynx sightings received are sent to the MN DNR or NRRI where they are compiled into a database. Lynx or lynx sign have been reported along several of the main roads in the project area. It is assumed that there is suitable habitat for a resident breeding population of lynx. We assume lynx presence throughout the project area and consider their habitat needs when planning management activities.

Factors Affecting Lynx Environment (see section 4.5 of program-level BA)

- **Roads and trails:** No new information
- **Winter dispersed recreation:** No new information
- **Trapping and shooting:** No new information
- **Vehicle collisions:** No new information
- **Other factors:** No new information

5.0 Affected Environment and Environmental Consequences for the Canada Lynx

A. Analysis Area:

Direct/Indirect Effects Analysis Area:

The analysis area includes Lynx Analysis Units 23, 38-40, 42, 44, and CHA 2. CHA 2 occupies the area along Lake Superior from the lake shore to about 4 miles inland. It runs from the southern edge of the Superior National Forest near Tofte, MN to the east edge of the Superior National Forest seven miles west of Hovland, MN. See Map 1.

Cumulative Effects Analysis Area (for both NEPA and ESA):

Cumulative effects consider all ownerships within the Direct/Indirect Effects Area. This is an appropriate area because less than 1,200 acres and less than two percent of any LAU or CHA2 are impacted by activities proposed in the project.

Analysis Timeframe:

The reasonably foreseeable timeframe for this analysis of this project is ten years. The Superior National Forest Land Management Plan was adopted in 2004 and will be used for 10 to 15 years.

B. Effects Analysis:

On February 24, 2009, the Fish and Wildlife Service revised the Canada lynx critical habitat designation to include all of the Superior National Forest (and other lands in Northeastern Minnesota) as critical habitat (USDI FWS 2009b). Lynx analysis indicators serve as appropriate indicators for analysis of effects to proposed critical habitat and its constituent elements. This is because the indicators address relevant *Primary Constituent Elements* of lynx habitat - those physical and biological features that are essential to the conservation of the species. Table 6 below crosswalks the lynx indicators to the Primary Constituent elements (PCE):

Critical habitat for lynx is defined as boreal forest landscapes supporting a mosaic of differing successional forest stages and containing:

- a) Presence of snowshoe hares and their preferred habitat conditions, including dense understories of young trees or shrubs tall enough to protrude above the snow;
- b) Winter snow conditions that are generally deep and fluffy for extended periods of time;
- c) Sites for denning having abundant coarse, woody debris, such as downed trees and root wads; and
- d) Matrix habitat (*e.g.*, hardwood forest, dry forest, non-forest, or other habitat types that do not support snowshoe hares) that occurs between patches of boreal forest in close juxtaposition (at the scale of a lynx home range) such that lynx are likely to travel through such habitat while accessing patches of boreal forest within a home range. The important aspect of matrix habitat for lynx is that these habitats retain the ability to allow unimpeded movement of lynx through them as lynx travel between patches of boreal forest.

Since analyses for effects are largely habitat based, the same analysis indicators are appropriate for analysis effects of lynx critical habitat (FWS 2011 BO, page 47).

Indicators

<i>Table 5. Analysis Indicators selection and rationale for exclusion: Canada Lynx</i>				
Indicator	OSG*	PCE	Use?	Rationale for exclusion
1. Snowshoe hare habitat acres.	G-WL-3	a	Y	
2. Percent of unsuitable habitat on NFS land (15% standard).	S-WL-1	a, b, c, d	Y	
3. Denning habitat in patches > 5 acres.	G-WL-4	c	Y	
4. Percent of lynx habitat in LAUs with adequate canopy cover- upland forest > 4 years old and lowland forest > 9 years old (Connectivity habitat).	S-WL-1	a, c, d	Y	
5. Miles of ATV trails allowed.	O-RMV-1	b	N	This project proposes no increases in road or trail miles. Existing roads and trails would remain open. There are no known plans to develop trails or roads as a direct result of this alternative. Driveways may be developed but the lengths are speculative at this time, included in the affected acreage analyzed, and most parcels are on or adjacent to existing roads resulting in no new access roads.
6. Miles of snowmobile trails allowed.	O-RMV-1	b	N	
7. Miles of temp and OML 1&2 roads.	O-WL-7 S-WL-2	b	N	
8. Policy on cross-country use of ATVs and snowmobiles.	S-RMV-3	b	N	This project proposes no NFS change to policy on cross-country use of ATVs and snowmobiles. Lands exchanged to Cook County may fall under potentially different trail policy than that applied on NFS lands. Though it is possible that policy differences between government agencies could lead to different results and effects, I am discounting these effects since they are speculative when applied to specific parcels since there are no known plans to develop trails.
9. Policy on use of ATVs and snowmobiles on OML 1&2 roads.	G-RMV-3	b	N	

<i>Table 5. Analysis Indicators selection and rationale for exclusion: Canada Lynx</i>				
Indicator	OSG*	PCE	Use?	Rationale for exclusion
10. Acres of snowshoe hare habitat in which within stand structure will be increased through diversity and under-planting of conifer on SNF lands.	O-WL-9	a	N	No planting is proposed in this project.
11. Acres and % of lynx habitat currently unsuitable on all ownerships in an LAU (30% guideline).	G-WL-3	a, c, d	Y	
12. Road and compacted trail density on all ownership.	G-WL-8	b	N	Density will not change as a result of this project. Existing snowmobile trails on federal parcels listed for exchange are expected to remain the same because they are major connecting trails that cross different ownerships.
14. Connectivity	D-WL-3h O-WL-7 O-WL-11 O-WL-12 O-WL-4	b, d	N	Connectivity analysis is covered by Indicator 4 (Forest Plan BA, 2004, page 125).
* OSG refers to objectives, standards, and guidelines in the Forest Plan.				

Existing Conditions and Effects**Lynx Habitat – Forest Condition Indicators (Tables 6-9)****Indicator 1. Snowshoe hare habitat acres.**

Snowshoe hare habitat would remain above 50 percent in all analysis areas.

<i>Table 6. Indicator 1: Snowshoe Hare Habitat on National Forest Lands in the Project Area.</i>					
Lynx Analysis Units*	Lynx Habitat	Snowshoe Hare Habitat Existing Condition		Snowshoe Hare Habitat Alternative 2	
	Acres	Acres	Percent	Acres	Percent
SNF32	38,743	19,404	50.1	19,404	50.1
SNF38	25368,	14,195	56.0	13,745	54.2
SNF39	16,874	11,118	65.9	10,838	64.2
SNF40	23,346	16,252	69.6	16,247	69.6
SNF42	19,609	12,982	66.2	12,942	66.0
SNF44	34,201	26,875	78.6	26,750	78.2
<i>Data source: 2012 Forest-wide lynx habitat analysis: ext_forage_anyr2012_110912.xsl.</i>					
<i>*This indicator applies only to LAUs, it does not apply to CHAs or critical habitat areas outside of LAUs.</i>					

Indicator 2: Cumulative change to unsuitable condition on NFS lands.

Cumulative change to unsuitable habitat in ten years would remain at or below 13.1 percent on NFS lands.

<i>Table 7. Indicator 2: Cumulative change to unsuitable (lynx) habitat condition in 10 years on NFS lands.</i>				
LAU	Existing Condition		Alternative 2	
	Acres	Percent	Acres	Percent
CHA2	33	0.1	294	1.0
SNF32	2,108	5.4	0	5.4
SNF38	2,609	10.3	450	12.1
SNF39	1,936	11.5	280	13.1
SNF40	2,001	8.6	5	8.6
SNF42	8	0.0	40	0.2
SNF44*	5,626	16.4	125	16.8
<i>Data source: LAU Data is from 2012 Forest-wide lynx habitat analysis: ext_15pct_anyr2012_110912.dbf. CHA data is from 2011 Forest BA data file: cha_15pct_anyr2010.xlsx.</i>				
<i>*LAU 44 is exempt from the 15% change condition and is shown for informational purposes only.</i>				

Indicator 3. Denning habitat in patches generally greater than 5 acre patches, comprising at least 10% of lynx habitat.

Denning habitat in patches of 5 acres or more would be present on 29 to 50 percent of federal lands in the analyzed areas.

Table 8. Indicator 3: Denning Habitat in patches > 5 acres on National Forest Lands in the Project Area

Lynx Analysis Units	Existing Condition			Alternative 2	
	Forested Lynx Habitat	Denning habitat in patches > 5 acres		Denning habitat in patches > 5 acres	
	Acres	Acres	Percent	Acres	Percent
CHA2	31,376	16,273	51.8	15,979	50.9
SNF32	35,882	15,260	42.5	15,260	42.5
SNF38	23,207	10,568	45.5	10,118	43.6
SNF39	15,007	6,322	42.1	6,042	40.3
SNF40	21,658	11,736	54.2	11,731	54.2
SNF42	18,460	9,884	53.5	9,844	53.3
SNF44	29,448	8,760	29.7	8,635	29.3
<i>Data source:</i> LAU Data is from 2012 Forest-wide lynx habitat analysis: ext_denning_anyr2012_110912.dbf. CHA data is from 2011 Forest BA data file: cha_denning_anyr2010.xlsx					

Indicator 4. Connectivity habitat.

Connectivity habitat would be present on 79 to 95 percent of lynx habitat in the analyzed areas.

Table 9. Indicator 4: Connectivity Habitat. Percent of lynx habitat in LAUs with adequate canopy cover- upland forest > 4 years old and lowland forest > 9 years old

Lynx Analysis Units	Existing Condition			Alternative 2	
	Lynx Habitat	Total Connective Habitat		Total Connective Habitat	
	Acres	Acres	Percent	Acres	Percent
CHA2	32,628	31,357	96.1	31,063	95.2
SNF32	38,744	34,288	88.5	34,288	88.5
SNF38	25,368	20,741	81.8	20,291	80.0
SNF39	16,874	13,431	79.6	13,151	77.9
SNF40	23,346	19,986	85.6	19,981	85.6
SNF42	19,609	18,433	94.0	18,393	93.8
SNF44	34,201	26,131	76.4	26,006	76.0
<i>Data source:</i> LAU Data is from 2012 Forest-wide lynx habitat analysis: ext_con_hab_anyr2012_110912.dbf. CHA data is from 2011 Forest BA data file: cha_con_hab_anyr2010.xlsx					

Cumulative Vegetation Effects Indicators

Indicator 11: Currently Unsuitable Lynx Habitat on all ownerships

Lynx habitat in an unsuitable condition on all ownerships is well below the 30% guideline at a range of 1.3 percent to 6.8 percent unsuitable.

<i>Table 10. Indicator 11: Lynx habitat in an unsuitable condition on all ownerships</i>					
Lynx Analysis Units	Total Lynx Habitat on all ownerships (acres)	Currently Unsuitable On all ownerships		Alternative 2	
		Acres	Percent	Acres	Percent
SNF32	41,592	543	1.3	0	1.3
SNF38	37,607	2,096	5.6	450	6.8
SNF39	26,170	1,451	5.5	280	6.6
SNF40	27,165	1,367	5.0	5	5.0
SNF42	27,775	534	1.9	40	2.1
SNF44	46,522	2,637	5.7	125	5.9
Data Source: 2012 Forest-wide lynx habitat analysis: Lynx30percent2012.xlsx					

C. Consistency with Forest Plan: Canada Lynx

<i>Table 11. Compliance of alternatives with Forest Plan direction: Canada Lynx</i>			
Forest Plan Guidance	Direction	Alts In Compliance	Basis for Compliance
O-WL-4	Maintain or improve habitat	all	Snowshoe hare habitat would occur on 50.1 percent to 78.2 percent of the federal lands and be reduced by less than 2 percent in any LAU.
O-WL-5	Seek opportunities to benefit TE spp.	all	Alternative 2 maintains lynx habitat, any improvement would be due to natural succession.
O-WL-6	Reduce or eliminate adverse effects to TE	all	Adverse effects are not expected with any alternative.
O-WL-7	Minimize building or upgrading roads in TE areas	all	No road building is proposed in any alternative.
O-WL-8	Promote the conservation and recovery of Canada lynx	all	All alternatives would maintain suitable habitat in public ownership.

<i>Table 11. Compliance of alternatives with Forest Plan direction: Canada Lynx</i>			
Forest Plan Guidance	Direction	Alts In Compliance	Basis for Compliance
O-WL-9	Manage for hare and alt prey habitat	all	Snowshoe hare habitat would occur on 50.1 percent to 78.2 percent of the federal lands and reduced by less than 2 percent in any LAU.
O-WL-10	Provide foraging habitat in proximity to denning habitat	Not applicable	The scattered location of the federal lands exchanged into county ownership would have a discountable effect on the proximity of denning and foraging habitat.
O-WL-11	Maintain habitat connectivity to reduce road mortality	all	Habitat connectivity would be maintained in Alternative 2 at 76 to 95 percent of lynx habitat. Scattered parcels would not increase road mileage.
O-WL-12	Participate in efforts to identify, map, and maintain linkage areas	all	This effort is being conducted on a regional scale and is beyond the scope of this project. However, adequate connectivity is maintained within the project area. There are no major barriers to lynx movement in the project area, between LAUs or between the project area and the BWCAW, Voyageurs National Park, or other ownership.
O-WL-13	Maintain competitive advantage of lynx in deep snow	Not applicable	No road or compacted trails are proposed in this project.
O-WL-14	Participate in cooperative efforts to reduce lynx mortality related to highways and other roads	all	There are no cooperative efforts to reduce the potential for lynx mortality related to highways and other roads as part of this project because no roads would be constructed.
O-WL-15	In BWCAW, lynx habitat will result from natural processes	all	The project area does not propose any management that would result in loss of connective habitat with the BWCAW.
G-WL-1	Moderate timing and intensity of mgt activities to maintain lynx habitat	all	The larger parcels are proposed for gravel extraction which would occur over many decades. Reclamation, including revegetation, would occur as areas of the gravel pits are emptied of gravel.
G-WL-2	Provide protection of known den sites	all	No den sites are known in the project area.

<i>Table 11. Compliance of alternatives with Forest Plan direction: Canada Lynx</i>			
Forest Plan Guidance	Direction	Alts In Compliance	Basis for Compliance
G-WL-3	No more than 30% of an LAU in unsuitable condition	all	At most, 6.8 percent of any LAU would be in unsuitable condition at one time.
S-WL-1	No more than 15% change to unsuitable in 10 years	all	Changes to suitable lynx habitat would remain below 15% in all lynx analysis units and critical habitat area 2. Although the cumulative change to unsuitable habitat would increase from 16.4 to 16.8 percent in LAU 44, this LAU is exempt from this indicator (USDA 2011).
G-WL-4	Maintain at least 10% denning habitat	all	Denning habitat would remain above 29 percent in all affected LAUs and critical habitat.
G-WL-5	Following a disturbance on NFS land greater than 20 contiguous acres (such as a blowdown, fire, insect, or disease), generally retain a minimum of 10% of the affected area on NFS land.	Not applicable	This project is not a response to natural disturbance.
S-WL-2	No net increase in groomed or designated over-the-snow trails	Not applicable	The project does not propose any increase in over-the-snow trails
G-WL-6	New over-the-snow routes should be designed to benefit lynx	Not applicable	The project does not propose any new over-the-snow trails
G-WL-7	Close trails and roads that intersect with new snow-compacting trails.	Not applicable	The project does not propose any new over-the-snow trails

<i>Table 11. Compliance of alternatives with Forest Plan direction: Canada Lynx</i>			
Forest Plan Guidance	Direction	Alts In Compliance	Basis for Compliance
G-WL-8	Maintain road density at or below 2mi/mi ² . Where greater, prioritize roads for seasonal restriction or reclamation.	Not applicable	The project does not propose any new over-the-snow trails
G-WL-9	Do not upgrade or pave dirt or gravel roads	Not applicable	This project does not propose to upgrade or pave gravel roads.

D. Determination of Effect for Canada Lynx*Table 12. Determination of Effect of Alternative 2 on Lynx and Critical Habitat.*

Management Activity	Determination	Summary of Rationale
Land Exchange Direct Effects	Lynx: Alt 2: NE Critical Habitat: Alt 2: NE	Land exchange will have no direct effects to lynx or critical habitat as it is a legal procedure. <i>No effect</i> to lynx or critical habitat is expected from the land exchange alone.
Land Exchange Indirect Effects	Lynx: Alt 2: NLAA Critical Habitat: Alt 2: NLAM	<p>Indirect effects of the land exchange would come from activities proposed by the county after the exchange takes place. The amount of habitat change in any analysis area is a small percentage and sufficient habitat is retained to meet Forest Plan objective, standards, and guidelines for protection of lynx and lynx habitat. Activities <i>may effect, but are not likely to adversely affect</i> lynx because</p> <ul style="list-style-type: none"> • Snowshoe hare habitat would remain above 50 percent in all analysis areas. • Denning habitat in patches of 5 acres or more would be present on 29 to 50 percent of federal lands in the analyzed areas. • Lynx may move through the impacted areas but the parcels are generally small and may be avoided. <p>Changes to critical habitat are within the parameters developed for the Forest Plan to meet lynx habitat needs. Activities <i>may effect, but are not likely to adversely modify lynx habitat.</i></p>
Land Exchange Cumulative Effects	Lynx: Alt 2: NLAA Critical Habitat: Alt 2: NLAM	<p>Potential cumulative effects may occur after federal parcels are exchanged. All alternatives in the proposed action of land exchange <i>may affect but are not likely to adversely affect/modify the lynx/critical habitat</i> because:</p> <ul style="list-style-type: none"> • All alternatives ensure that no more than 6.8% of habitat would be in unsuitable condition for lynx, well below the 30% unsuitable indicator level (G-WL-3). • Road and trail density would remain the same because no roads or trails are proposed in the land exchange activities. • Connectivity habitat would be present on 79 to 95 percent of lynx habitat in the analyzed areas. • Cumulative change to unsuitable habitat in ten years would remain at or below 13.1 percent on NFS lands.
NE = No effect NLAA = Not likely to adversely affect NLAM = Not likely to adversely modify		

6.0 Operational Standards and Guidelines

There are no mitigations applied in this project.

7.0 Monitoring

The Forest Plan identifies three monitoring elements related to threatened and endangered species (Chapter 4, Table MON-4):

- To what extent is Forest management contributing to the conservation of threatened and endangered species and moving toward short term (10-20 years) and long-term (100 years) objectives for their habitat conditions and population trends?
- To what extent is the Forest maintaining no net increase in groomed or designated over-the-snow trail routes unless the designation effectively consolidates use and improves lynx habitat through a net reduction of compacted snow areas?

Additional Monitoring Elements:

None

8.0 Signature

Conducted by: /s/ Melissa Grover Date: March 25, 2013

Melissa Grover, Wildlife Biologist

9.0 References

- All USDA Forest Service, Superior National Forest documents are available at <http://www.fs.usda.gov/land/superior/landmanagement>
- USDA Forest Service. 2004a. Forest Plan Revision Biological Assessment. Superior National Forest, Duluth, MN.
- 2004b. Forest Plan Revision EIS. Superior National Forest, Duluth, MN.
2012. MnDOT ARMER Biological Assessment, Superior National Forest, Duluth, MN.
2011. Forest Plan Revision Biological Assessment. Superior National Forest, Duluth, MN.
- USDI Fish and Wildlife Service 2013. Letter from Field Supervisor Tony Sullins. On file at Superior National Forest, Duluth, MN.
- 2009b. Federal Register Notice, February 24, 2009 Revised Designation of Critical Habitat for the Contiguous United States Distinct Population Segment of the Canada Lynx and Critical Habitat Unit #2 Map.
2011. Biological opinion for the Revised Land and Resource Management Plan for the Superior National Forest. On file at Superior National Forest, Duluth, MN.

10.0 Appendix A. Maps

Map 1: Vicinity and Lynx Analysis Units Map

Map 2: Critical Habitat Areas

Federal Land Maps F-1 through F11

11.0 Appendix B. Cook County Land List